Docket No.: 064706-0013   **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	: Customer Number: 33401
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ADAIR, DAVE B., et al.	: Confirmation Number: 4575
	:
Application No.: 10/036,966	: Group Art Unit: 2121
	:
Filed: December 20, 2001	: Examiner: HARTMAN JR., Ronald D.
	:
For: MOVE LOT SIZE BALANCING SYSTEM AND METHOD	

CERTIFICATE OF ELECTRONIC TRANSMISSION

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office On <u>Jun 7, 2006.</u>

Jessica Brown

AMENDMENT AND RESPONSE TO OFFICE ACTION,
MAILED MAY 25, 2006

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is in response to the Office Action, mailed May 25, 2006.

Amendments to the claims begin on page 2 of this paper. Remarks begin on page 9 of this

paper.

AMENDMENTS TO THE CLAIMS

1.   (Currently Amended) A method for ~~optimizing matching of~~ calculating and sending production orders based on dealer orders ~~with manufacturing plant output~~ that are optimized for manufacturing plant output, comprising:

    receiving order data descriptive of a plurality of requested vehicles, the order data including specified vehicle options; combining the order data with manufacturing plant data, the manufacturing plant data representing vehicle production capabilities of a plurality of manufacturing plants, to generate a manufacturing plant production order;

    identifying attribute constraints within the manufacturing plant production order by determining which of the specified vehicle options of the manufacturing plant production order are subject to the vehicle production capabilities of the manufacturing plants;

    performing a calculation using a linear expression on the manufacturing plant production order and the attribute constraints, the calculation dividing the manufacturing plant production order into balanced assignments among the plurality of manufacturing plants according to the multiple attribute constraints; and

    ~~assigning~~ sending a production order to each of the plurality of manufacturing plants based on the calculated balanced assignments.

2.   (Original) The method of claim 1 wherein the manufacturing plant data includes limitations on the combination of features or variations that a factory is prepared to produce.

3.   (Original) The method of claim 2 wherein the limitations indicate an upper production bound and a lower production bound.

4.   (Original) The method of claim 1 wherein the attribute constraints are weighted according to a pre-determined ranking hierarchy.

5.   (Previously presented) The method of claim 4 wherein calculation using a linear expression comprises:

   (a) applying each of the weighted attribute constraints to the manufacturing plant production order;

   (b) calculating a minimum production constraint for each of the plurality of manufacturing plants according to the plurality of weighted attribute constraints;

   (c) applying a minimum production tolerance, for each of the plurality of manufacturing plants, to the manufacturing plant production order; and

   (d) generating a set of balanced assignments that distributes the manufacturing plant production order among the plurality of manufacturing plants wherein each of the plurality of manufacturing plants is assigned a balanced production order.

6.   (Original) The method of claim 5 wherein the step of generating is followed by reviewing the set of balanced assignments to determine whether it conforms to a pre-determined balance criteria.

7.   (Original) The method of claim 5 wherein the pre-determined balance criteria comprises vehicle production shipment costs.

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8.   (Original) The method of claim 6 wherein the calculation using a linear

expression is iterative, and is terminated when the set of balanced assignments conforms to a pre-

determined balance criteria.

A method for transforming a set of vehicles ordered by a dealer conforming

9.   (Currently amended) A method for ~~transforming a set of vehicles~~ generating a

manufacturing plant production order based on a set of vehicles ordered by a dealer that

conform~~ing into a matching set of orders to a manufacturer, the set of orders~~ to the

manufacturer's requirements and limitations for directing a vehicle production to the dealer,

comprising:

receiving data descriptive of a set of requested vehicles, said data including a plurality of

attribute constraints;

organizing the received data to construct a manufacturing plant production order

including data descriptive of a plurality of sets of requested vehicles;

ranking the plurality of attribute constraints according to a pre-determined hierarchy;

weighting each of the plurality of attribute constraints according to the ranking;

processing the manufacturing plant production order with a linear expression process

comprising:

(a) applying each of the plurality of weighted attribute constraints to the

manufacturing plant production order;

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(b) calculating a minimum constraint for each of a plurality of manufacturing plants according to the plurality of weighted attribute constraints;

(c) applying a minimum production tolerance to the manufacturing plant production order;

(d) generating a set of balanced assignments that distributes the manufacturing plant production order among a plurality of manufacturing plants wherein each of the plurality of manufacturing plants is assigned a balanced production order;

(e) reviewing the set of balanced assignments that is generated in each step of said linear expression process to determine whether the set of balanced assignments meets a pre determined balance criteria; ~~and~~

(f) terminating said linear expression process when the set of balanced assignments meets the pre determined balance criteria; and

(g) generating the manufacturing plant production order.

10.   (Original) The method of claim 9 wherein the pre-determined balance criteria comprises vehicle production shipment costs.

11.   (Original) The method of claim 9 wherein the linear expression process further comprises: applying transportation costs to the manufacturing plant production order.

12.   (Original) The method of claim 9 wherein the attribute constraints include at least one of a group of attributes consisting of vehicle color, vehicle body type, number of doors, and vehicle options.

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13.   (Original) The method of claim 9 further comprising transmitting assignments from the set of balanced assignments to the manufacturing plants.

14.   (Original) The method of claim 9 wherein the re-seller is one of a plurality of re-sellers.

15.   (Previously presented) A system for matching dealer orders with manufacturing plant output to optimize manufacturing plant production and product distribution, comprising:

    a computer having a program for balancing production lot sizes and manufacturing plant orders;

    data storage operatively connected to the computer and containing manufacturing plant data representing manufacturing plant production capabilities and manufacturing plant production tolerances;

    the computer configured to receive order data descriptive of a plurality of sets of requested vehicles, said order data including specified vehicle options;

    and the computer also operable for executing the program, said program comprising a linear expression process for transforming the plurality of sets of requested vehicles into assignments balanced among a plurality of manufacturing plants according to multiple attribute constraints and minimum manufacturing plant production.

16.   (Original) The system of claim 15 wherein the data storage is contained in the computer.

17.   (Original) The system of claim 15 wherein the order data comprises the multiple attribute constraints.

18.   (Original) The system of claim 16 wherein the multiple attribute constraints are weighted according to a hierarchy.

19.   (Previously presented) The system of claim 17 wherein the linear expression comprises:

(a) applying each of the multiple weighted attribute constraints to the order data;

(b) calculating a minimum constraint and a maximum constraint for each of the plurality of manufacturing plants according to the multiple weighted attribute constraints; and

(c) applying the manufacturing plant production tolerances to the manufacturing plant production order.

20.   (Currently amended) Computer-readable storage media containing software thereon which, when loaded and executed on a computer, and in combination with execution of other software on the computer, causes the following steps actions to occur:

data descriptive of a plurality of requested vehicles, said data including specified vehicle options, is organized to construct a manufacturing plant production order;

a plurality of attribute constraints within the data is identified; the plurality of attribute constraints is ranked according to a pre-determined hierarchy;

each of the plurality of attribute constraints is weighted according to the ranking;

the manufacturing plant production order is processed with a linear expression process wherein:

each of the plurality of weighted attribute constraints is applied to the manufacturing plant production order;

a minimum constraint and a maximum constraint are calculated for each of a plurality of manufacturing plants according to the plurality of weighted attribute constraints;

a minimum production tolerance is applied to the manufacturing plant production order;

a set of balanced assignments that distributes the manufacturing plant production order among a plurality of manufacturing plants is generated, wherein each of the plurality of manufacturing plants is assigned a balanced production order;

the set of balanced assignments that is generated in each step of said linear expression process is reviewed to determine whether the set of balanced assignments is adequately balanced; ~~and~~

the linear expression process is terminated when the set of balanced assignments conforms to a pre-determined balance criteria; and

the manufacturing plant production order is generated.

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REMARKS

Claims 1-20 are pending.

Claims 15-19 have been allowed.

Claims 1-14 and 20 were rejected because they were allegedly directed to non-statutory subject matter. However, the Examiner stated that claims 1-14 and 20 would be allowed if rewritten to overcome the outstanding issue with regards to 35 U.S.C. 101.

Claims 1, 9 and 20 – the sole independent claims among the rejected claims – have been amended. As amended, it is respectfully submitted that claims 1-14 and 20 meet the requirements of 35 U.S.C. 101. Reconsideration of their rejection is respectfully requested.

Independent claim 1 has been amended to be directed to a method for calculating and sending production orders, based on dealer orders, that are optimized for manufacturing plant output. The claim now specifically requires that the production orders be sent to the manufactures, a new limitation that is supported by the original specification. *See* FIG. 3 (call out 322); ¶ 59 (last sentence).

The standard for determining statutory subject matter of a computer-related process is now well established: "[I]t must produce a 'useful, concrete and tangible result.' *State Street*, 149 F. 3d at 1373, 47 USPQ2d at 1601-02." MPEP 2106(A). That standard is met here.

First, the claimed invention produces a "useful . . . result." To meet this requirement, "the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible." Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility ("Guidelines") at p. 20. Amended claim 1 is directed to a "specific" utility – a method for generating and sending production orders. It is also directed to a "substantial" utility. The subject invention may be of substantial benefit to businesses that need to determine production orders based on submitted

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orders when there are constraints on the production facilities. Finally, it is directed to a "credible" utility. The invention enhances the ability of manufactures to better meet the orders that are provided. To be sure, not even the Examiner appears to dispute that this requirement is met.

Second, the invention produces a "concrete . . . result". "Usually, this question arises when a result cannot be assured. In other words, the process must have a result that can be substantially repeatable . . . ." Guidelines at p. 22. Again, this standard is met. The process of claim 1 is based on "performing a calculation using a linear expression," an operation using the science of mathematics. And again, not even the Examiner appears to dispute that this requirement is met.

Finally, the invention produces a "tangible . . . result." To meet this requirement, the claim "must set forth a practical application . . . to produce a real-world result." Guidelines at p. 21. Amended claim 1 does this. It sets forth the practical application of determining production orders and the real word result of generating and sending those production orders to the manufactures.

To be sure, it is <u>not</u> necessary for the claimed process to produce a result that can be touched and felt. Indeed, this very argument was raised and <u>rejected</u> by the Federal Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999).

In *AT&T*, the defendant argued that the following claim was non-statutory because if lacked a "physical limitation":

> 1. A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

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> generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and

> including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers.

172 F.3d at 1354.

The Federal Circuit squarely rejected the argument that the absence of "physical limitations" rendered the claim non-statutory:

> Excel also contends that because the process claims at issue lack physical limitations set forth in the patent, the claims are not patentable subject matter. This argument reflects a misunderstanding of our case law. . . . Since the claims at issue in this case are directed to a process in the first instance, a structural inquiry is unnecessary.

> [T]his type of physical limitations analysis seems of little value because "after Diehr and Alappat, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing [**23] numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a 'useful, concrete and tangible result.'"

172 F.3d at 1359 (emphasis added).

The Federal Circuit went on to hold that this claim – a claim that raises even more difficult statutory subject matter issues that are presented here – was statutory:

> It is clear from the written description of the '184 patent that AT&T is only claiming a process that uses the Boolean principle in order to determine the value of the PIC indicator. The PIC indicator represents information about the call recipient's PIC, a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber. Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of § 101.

172 F.3d at 1358 (emphasis added).

It is clear that claim 1 here produces just as much of a "useful, concrete and tangible result" as did the claim that the Federal Circuit held was statutory in *AT&T*.

Amended claim 9[1] is similarly directed to a method for generating a manufacturing plant production order based on a set of vehicle orders and is also statutory for the reasons stated above. Indeed, it is even closer to the claim format that the Federal Circuit found to be statutory in *AT&T* after pointing out that "the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a 'useful, concrete and tangible result.'" 172 F.3d at 1358.

Amended claim 20[2] is directed to a computer-readable storage media that contains software that, among other actions, generates a manufacturing plant production order. It too is therefore statutory for the same reasons as have been discussed above in connection with claim 1. It is also statutory for an additional reason: It is directed to an article of manufacture:

> [A] claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.

MPEP 2106(IV)(B)(1)(a) (emphasis added).

The remaining claims are all dependent on one of the independent claims that are discussed above and are also therefore directed to statutory subject matter for at least the reasons stated above.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that this case is now in condition for allowance and early notice of same is earnestly requested.

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[1] The amendment adds the limitation of "generating the manufacturing plant production order." This is also supported by the original specification. *See* FIG. 3 (call out 322); ¶ 59 (last sentence).

[2] The amendment adds the limitation of "the manufacturing plant production order is generated." This is also supported by the original specification. *See* FIG. 3 (call out 322); ¶ 59 (last sentence).

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 501946 and please credit any excess fees to such deposit account.

Respectfully submitted,

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